SITE ASSESSMENT REPORT
FOR
R AND R SALES
SOUTH CHICAGO HEIGHTS, COOK COUNTY, ILLINOIS
TDD: S05-9905-007
PAN: 9Y0701SIXX
CERCLIS ID: ILSFN0507804

July 15, 1999

Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Emergency Response Section
77 West Jackson Boulevard
Chicago, Illinois 60604

Prepared by: _____ Date: 7-15-99
Lisa Graczyk, START Project Manager

Reviewed by: _____ Date: 7/15/99
Patrick Zwilling, Assistant START Program Manager

Approved by: _____ Date: 7-15-99
Mary Jane Ripp, START Program Manager

ecology and environment, inc.
International Specialists in the Environment
33 North Dearborn Street, Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

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1. Introduction

The United States Environmental Protection Agency (U.S. EPA) tasked the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E), under Technical Direction Document (TDD) S05-9905-007, to conduct a site visit, document and assess site conditions, conduct sampling activities, provide analytical support, perform air monitoring, and provide options and recommendations to the U.S. EPA based on site assessment activities, for the R and R Sales site located in South Chicago Heights, Cook County, Illinois.

2. Background

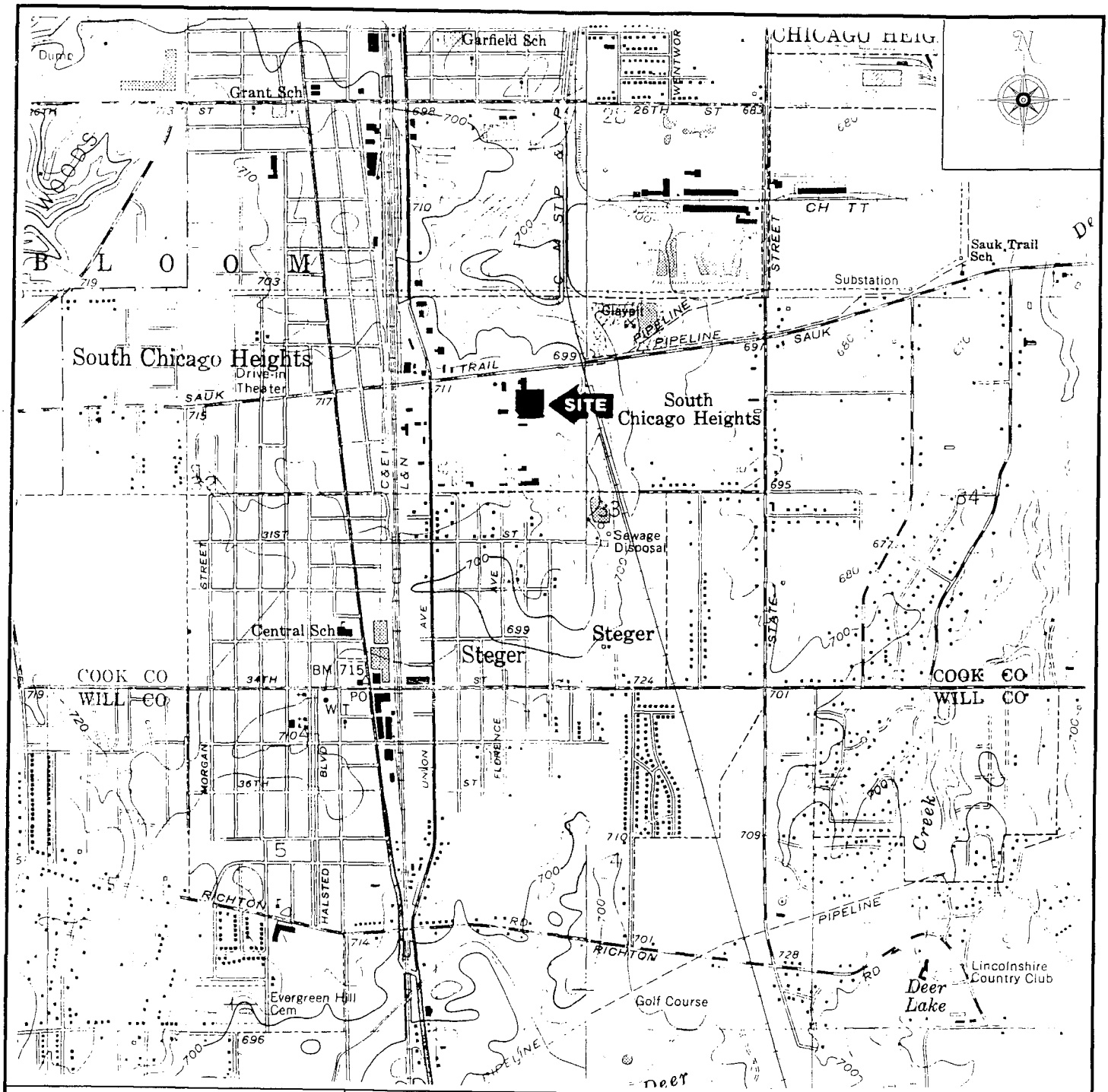
2.1 Site Description

The R and R Sales site is an inactive electroplating facility located at 3211 Holeman Avenue, South Chicago Heights, Cook County, Illinois (latitude 41°28'15"N, longitude 89°37'10"W)(Figure 2-1). The site is located in a mixed industrial and residential area. The site is bordered to the west by Holeman Avenue, to the north by an auto body shop, to the south by an architectural molding manufacturer, and to the east by a residence. A steel facility is located west of the site across Holeman Avenue.

The site consists of a 7,000 square-foot building and a fenced yard. Inside the building are several drums and small containers, and an office area. In the yard are several staged drums and containers. All doors to the building and the fence's gate are locked. However, there was a large hole in an overhead door located in the rear yard. A trespasser could enter the building through this hole after climbing the fence.

2.2 Site History

The R and R Sales site is an inactive electroplating facility which performed electroless nickel and chromium processes. Mr. Richard Newman Sr. was the owner of the R and R Sales facility until the business went bankrupt in the early 1990s. It is unknown when the facility began operations. Mr. Newman liquidated all his business assets when the company went bankrupt. According to Mr. Newman, 400 gallons of chromic acid were left inside the building, and 2,500 gallons of used electroless nickel were left outside the building when the facility was abandoned. The company records were all destroyed.



Quadrangle Location

ecology and environment, inc.

Superfund Technical Assessment and Response Team

Region 5

33 North Dearborn Street, Suite 900, Chicago, Illinois 60602

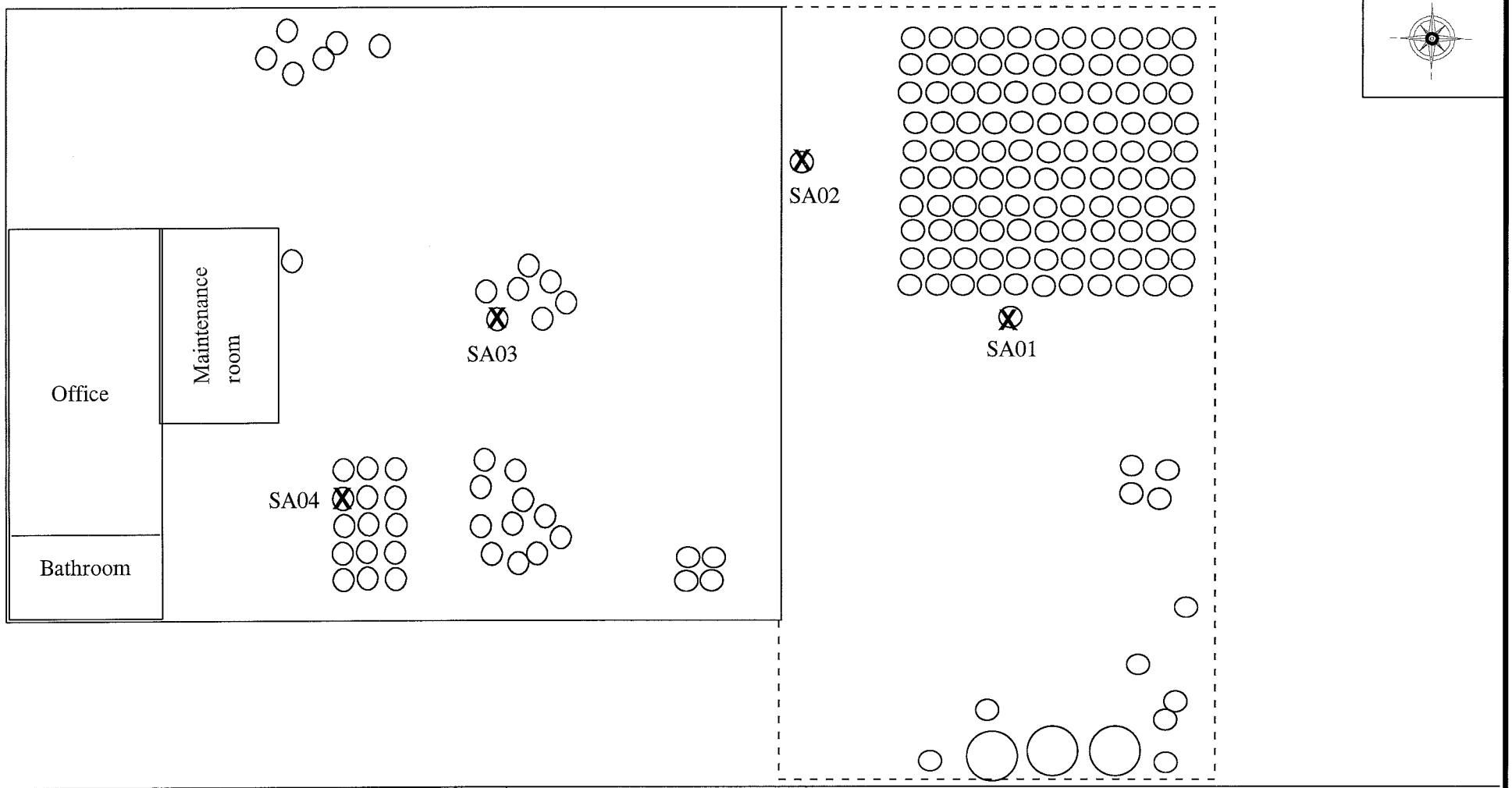
TITLE: Site Location Map	FIGURE: 2-1
SITE: R and R Sales	SCALE: 1:24,000
CITY: South Chicago Heights STATE: Illinois	TDD: S05-9905-007
SOURCE: USGS Topographic Map 7.5 Minute Series - Steger, IL Quadrangle	DATE: 1953 REVISED: 1973

3. Site Assessment

On May 13, 1999, START members Lisa Graczyk and Larry Lueck, and U.S. EPA On-Scene Coordinator (OSC) Brad Benning met at the R and R Sales site and conducted a site assessment. Activities included a site reconnaissance with air monitoring, drum sampling, and drum inventorying.

During the site reconnaissance, air monitoring was conducted with a photoionization detector (PID), an explosimeter, and a Draeger Pac III with a cyanide detector. No readings above background were detected. START observed 133 drums/containers located outside in the rear yard. Several of the metal drums were deteriorated. The poly drums appear to be in good condition. Two of the 5-gallon pails located outside had no lids and appeared to contain chromic acid. The pH of one of these pails was tested with pH paper and a reading of 1 standard unit (SU) was obtained. The entire rear yard which contained these drums is fenced. A large exhaust pipe was observed exiting the rear of the building. This pipe was not attached to anything inside the building. Approximately 30 drums and 60 small containers are located inside the building. Some of the drums/containers are missing lids and most are in fair condition. The building's roof is in poor condition. It contains several holes that were allowing rain into the building. There is an office and maintenance room located in the southwest corner of the building. There are approximately four 1-gallon containers in the maintienance room. The following labels were observed on drums/containers: "Corrosive", "Flammable Solid", "Trichlorethylene", "Ammonium Hydroxide", "Chromic Acid", "Enplate NI-417C", "Nitric Acid", "Sulfuric Acid", "Enstrip", "Actane- Acid Cleaner", "Phosphite", and "Nickel Chloride".

Following the reconnaissance, four samples were collected (Figure 3-1). All samples were collected from drums which tested acidic with pH paper. Sample SA01, a clear liquid with a slight blue tint, was collected from a 55-gallon drum which was not labeled and located in the rear yard. Sample SA02 was collected from a 5-gallon pail located outside, near the exhaust pipe in the rear yard. This pail had no lid and contained a dark reddish brown liquid. Sample SA03 was collected from a 5-gallon container with no lid located inside the building. The container contained a dark brown liquid. Sample SA04 was collected from a 55-gallon drum labeled "sulfuric acid". This drum contained a brown liquid.



Legend

- Drum/container
- Fence
- X Approximate location of container from which sample was collected

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Superfund Technical Assessment and Response Team
Region 5
33 North Dearborn Street, Chicago, Illinois 60602

Title	Sample Location Map	Figure	3-1
Site	R and R Sales	Scale	Not to scale
City	South Chicago Heights	State Illinois	TDD S05-9905-007
Source	Ecology and Environment, Inc.	Date	1999

An inventory of the containers present at the site was collected. The majority of the 133 drums outside were not labeled. These drums are suspected to contain mostly acidic nickel solutions and some chromic acid solutions. The drum inventory is presented in Appendix B.

The samples were packaged and shipped to TriMatrix Laboratories, Inc., in Grand Rapids, Michigan, for pH, total chromium, and total nickel analyses. A U.S. EPA Office of Solid Waste and Emergency Response (OSWER) Quality Assurance Level II data package was requested. All samples were analyzed under analytical TDD S05-9905-806.

4. Analytical Results

Analytical results indicate that some materials on site exceed Resource Conservation and Recovery Act (RCRA) characteristics for hazardous wastes. Analytical results are summarized in Table 4-1. The validated data is presented in Appendix C.

The RCRA hazardous waste criteria (40 Code of Federal Regulations [CFR] Subsection [§] 261.22) for corrosivity (waste code D002) is a pH of less than or equal to 2 SU. All four samples had a pH of less than 1 SU designating them as a hazardous waste. Total chromium results ranged from 65,400 to 161,000 milligrams per kilogram (mg/kg), or 6% to 16%. Total nickel results ranged from 23 to 301 mg/kg.

Table 4-1

ANALYTICAL RESULTS
R AND R SALES
SOUTH CHICAGO HEIGHTS, ILLINOIS

MAY 13, 1999

Parameter	Sample Designation			
	SA01	SA02	SA03	SA04
pH (SU)	<1	<1	<1	<1
Total Metals (mg/kg)				
Chromium	NA	161,000	65,400	68,200
Nickel	NA	301	25	23

Key:
SU = Standard units.
mg/kg = Milligrams per kilogram.
NA = Not analyzed.

Source: TriMatrix Laboratories, Inc., Grand Rapids, Michigan (Analytical TDD S05-9905-806).

5. Discussion of Potential Threats

Conditions present at the R and R Sales site that warrant an appropriate removal action as set forth in paragraph (b) (2) of Section 300.415 of the National Oil and Hazardous Substances Contingency Plan (NCP) include:

- **Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants.** The R and R Sales site is located in an area with mixed commercial and residential development. The nearest residence is adjacent to the east of the site. The building on site is locked and the fence surrounding the rear yard is in good condition and the gate is locked. However, a trespasser could easily climb the fence and become exposed to the drums in the yard or enter the building through the hole in the overhead door after climbing the fence. Liquid wastes at site were proven by analytical results to be acidic and to contain nickel and very high levels of chromium. Trichloroethylene was also observed at the site. High exposures to chromium can cause asthma and lung cancer. Trichloroethylene is a probable carcinogen and has been associated with respiratory defects. Acids generally cause skin burns and irritations, and respiratory problems.

- **Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.** The drum/container samples contained hazardous wastes. Several drums are in very poor condition because they are rusted through. Rain could cause the drums to further deteriorate, both outside and inside the building through holes in the roof. Some of the drums/containers outside had no lids. Rain could cause these liquids to spill out over the containers and onto soil.

- **Threat of fire or explosion.** Improper handling or vandalism of the flammable solid containers on site could result in a fire or explosion.

6. Summary

Conditions observed at the R and R Sales site warrant a removal based upon the presence of hazardous wastes in drums that are deteriorating. Samples collected on site exhibited a pH of 2 SU which designates them as RCRA hazardous. The hazardous wastes include chromic acid and materials in drums labeled "trichlorethylene" and "ammonium hydroxide".

Appendix A

Photodocumentation

SITE ASSESSMENT REPORT
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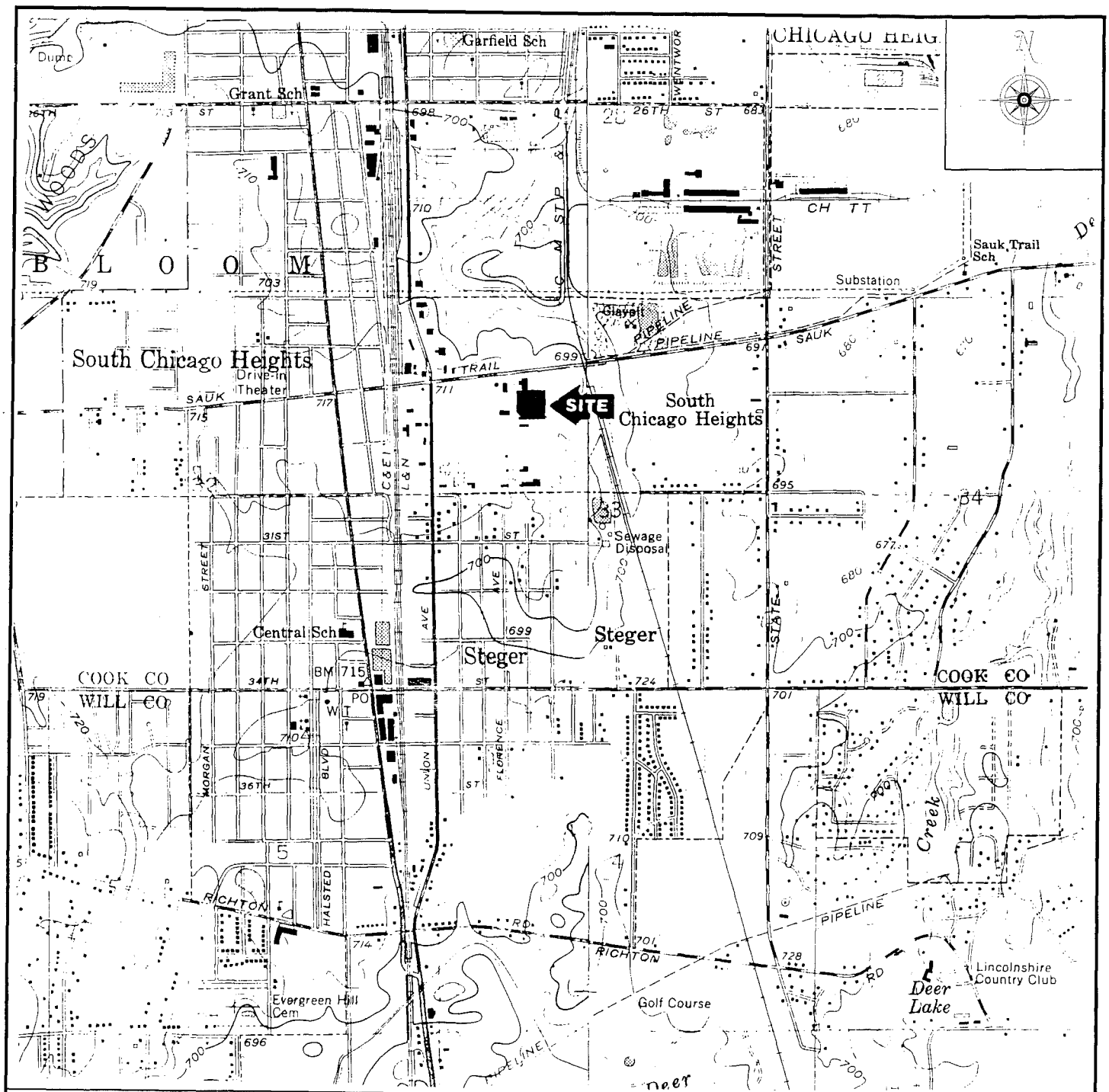

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Superfund Technical Assessment and Response Team

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TITLE: Site Location Map	FIGURE: 2-1
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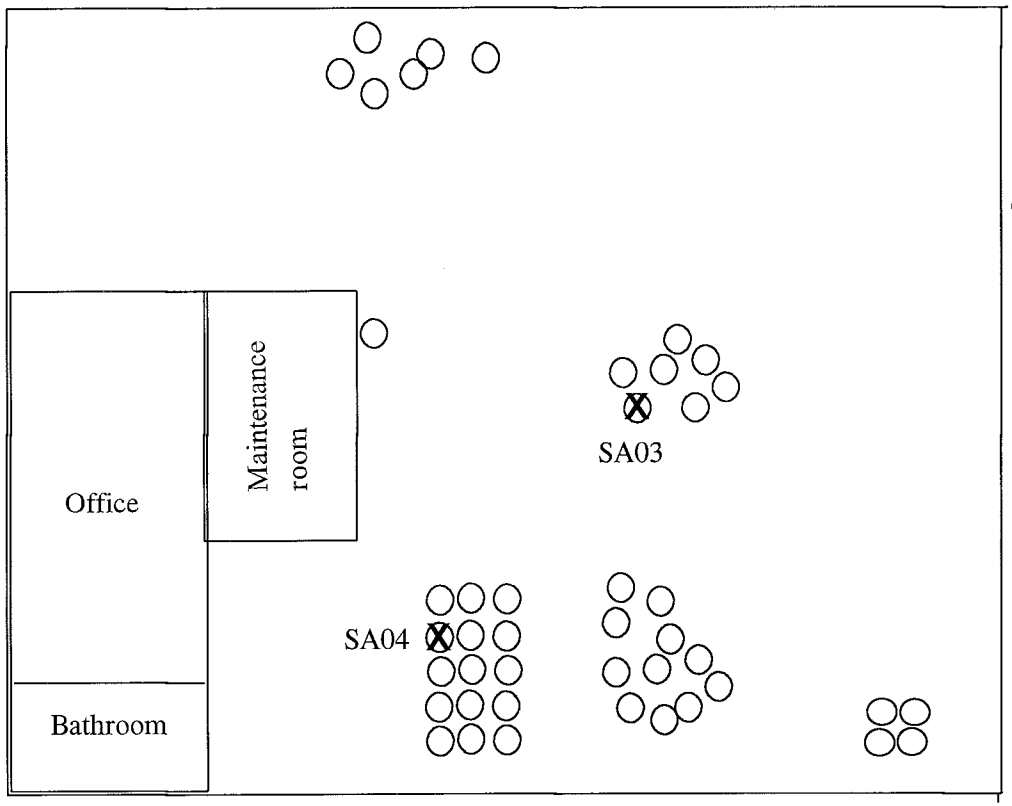

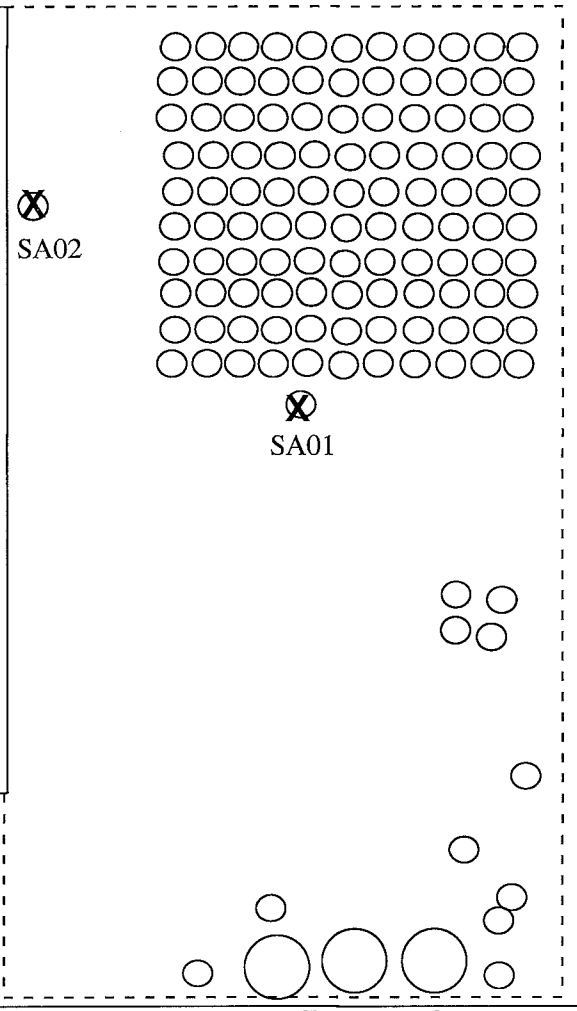

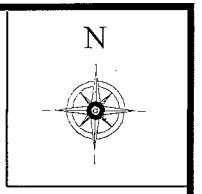

Legend

- Drum/container
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ecology and environment, inc.
Superfund Technical Assessment and Response Team
Region 5
33 North Dearborn Street, Chicago, Illinois 60602

Title	Sample Location Map	Figure	3-1
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Conditions observed at the R and R Sales site warrant a removal based upon the presence of hazardous wastes in drums that are deteriorating. Samples collected on site exhibited a pH of 2 SU which designates them as RCRA hazardous. The hazardous wastes include chromic acid and materials in drums labeled "trichlorethylene" and "ammonium hydroxide".

Appendix A

Photodocumentation

Site: R and R Sales **Date:** May 13, 1999 **Time:** 0945
Location: South Chicago Heights, IL **Direction:** East **Photographer:** Lisa Graczyk
Subject: Front of the R and R Sales building.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 0945
Location: South Chicago Heights, IL **Direction:** Northeast **Photographer:** Lisa Graczyk
Subject: Building to the north of the R and R Sales facility.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 0945
Location: South Chicago Heights, IL **Direction:** Northeast **Photographer:** Lisa Graczyk
Subject: Drums located in the northeast corner of the rear yard.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 0945
Location: South Chicago Heights, IL **Direction:** Northeast **Photographer:** Lisa Graczyk
Subject: Closeup of drums located in the northeast corner of the rear yard.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 0945
Location: South Chicago Heights, IL **Direction:** West **Photographer:** Lisa Graczyk
Subject: Steel facility across (west) from the R and R Sales facility.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 1130
Location: South Chicago Heights, IL **Direction:** West **Photographer:** Lisa Graczyk
Subject: Open container in rear yard. Sample SA02 was collected from this container.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 1030
Location: South Chicago Heights, IL **Direction:** Northwest **Photographer:** Lisa Graczyk
Subject: Drum labeled "Flammable Solid".

Site: R and R Sales **Date:** May 13, 1999 **Time:** 1030
Location: South Chicago Heights, IL **Direction:** Northwest **Photographer:** Lisa Graczyk
Subject: Drum labeled "Trichlorethylene".

Site: R and R Sales
Location: South Chicago Heights, IL
Subject: Containers inside the building.
Date: May 13, 1999
Direction: North
Time: 1030
Photographer: Lisa Graczyk

Site: R and R Sales
Location: South Chicago Heights, IL
Subject: Pallet of four drums.
Date: May 13, 1999
Direction: West
Time: 1030
Photographer: Lisa Graczyk

Site: R and R Sales **Date:** May 13, 1999 **Time:** 1045
Location: South Chicago Heights, IL **Direction:** Southwest **Photographer:** Lisa Graczyk
Subject: Drum labeled "Enplate NI-417C".

Site: R and R Sales **Date:** May 13, 1999 **Time:** 1045
Location: South Chicago Heights, IL **Direction:** Northeast **Photographer:** Lisa Graczyk
Subject: Closeup of deteriorating drums in the rear yard.

Site: R and R Sales
Location: South Chicago Heights, IL
Subject: Deteriorated drum.

Date: May 13, 1999
Direction: Down

Time: 1045
Photographer: Lisa Graczyk

Site: R and R Sales
Location: South Chicago Heights, IL
Subject: Open pail outside building.

Date: May 13, 1999
Direction: Down

Time: 1045
Photographer: Lisa Graczyk

Site: R and R Sales **Date:** May 13, 1999 **Time:** 0945
Location: South Chicago Heights, IL **Direction:** East **Photographer:** Lisa Graczyk
Subject: Front of the R and R Sales building.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 0945
Location: South Chicago Heights, IL **Direction:** Northeast **Photographer:** Lisa Graczyk
Subject: Building to the north of the R and R Sales facility.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 0945
Location: South Chicago Heights, IL **Direction:** East **Photographer:** Lisa Graczyk
Subject: Front of the R and R Sales building.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 0945
Location: South Chicago Heights, IL **Direction:** Northeast **Photographer:** Lisa Graczyk
Subject: Building to the north of the R and R Sales facility.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 0945
Location: South Chicago Heights, IL **Direction:** Southeast **Photographer:** Lisa Graczyk
Subject: Building to the south of the R and R Sales facility.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 0945
Location: South Chicago Heights, IL **Direction:** South **Photographer:** Lisa Graczyk
Subject: Drums located in the rear yard along the south fenceline.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 0945
Location: South Chicago Heights, IL **Direction:** Northeast **Photographer:** Lisa Graczyk
Subject: Drums located in the northeast corner of the rear yard.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 0945
Location: South Chicago Heights, IL **Direction:** Northeast **Photographer:** Lisa Graczyk
Subject: Closeup of drums located in the northeast corner of the rear yard.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 0945
Location: South Chicago Heights, IL **Direction:** East **Photographer:** Lisa Graczyk
Subject: Rear of the R and R Sales building. Note the hole in the overhead door.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 0945
Location: South Chicago Heights, IL **Direction:** North **Photographer:** Lisa Graczyk
Subject: Rear of building. Note exhaust pipe coming out of building.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 0945
Location: South Chicago Heights, IL **Direction:** West **Photographer:** Lisa Graczyk
Subject: Steel facility across (west) from the R and R Sales facility.

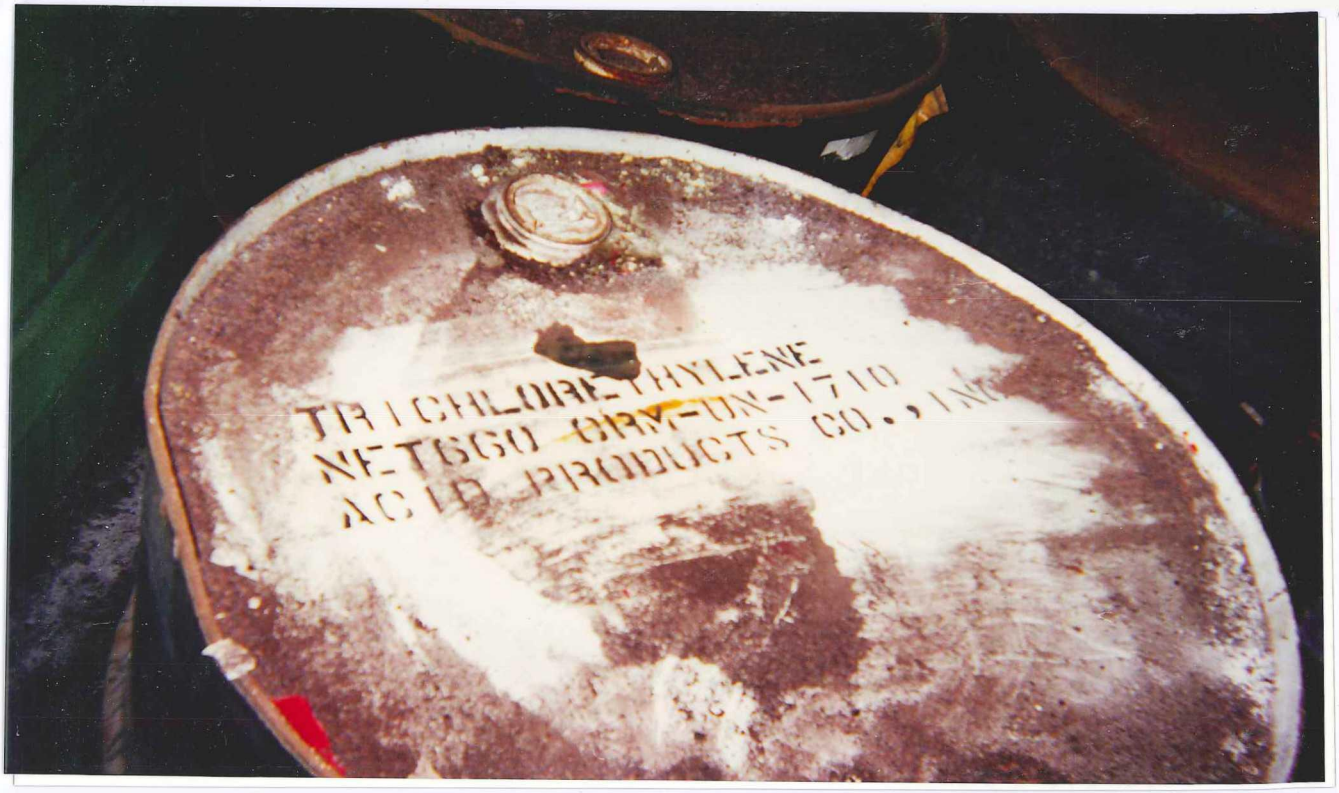
Site: R and R Sales **Date:** May 13, 1999 **Time:** 1130
Location: South Chicago Heights, IL **Direction:** West **Photographer:** Lisa Graczyk
Subject: Open container in rear yard. Sample SA02 was collected from this container.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 1030
Location: South Chicago Heights, IL **Direction:** North **Photographer:** Lisa Graczyk
Subject: Drum labeled "Corrosive".

Site: R and R Sales **Date:** May 13, 1999 **Time:** 1030
Location: South Chicago Heights, IL **Direction:** West **Photographer:** Lisa Graczyk
Subject: Drum labeled "Chromic Acid".

Site: R and R Sales **Date:** May 13, 1999 **Time:** 1030
Location: South Chicago Heights, IL **Direction:** Northwest **Photographer:** Lisa Graczyk
Subject: Drum labeled "Flammable Solid".

Site: R and R Sales **Date:** May 13, 1999 **Time:** 1030
Location: South Chicago Heights, IL **Direction:** Northwest **Photographer:** Lisa Graczyk
Subject: Drum labeled "Trichlorethylene".

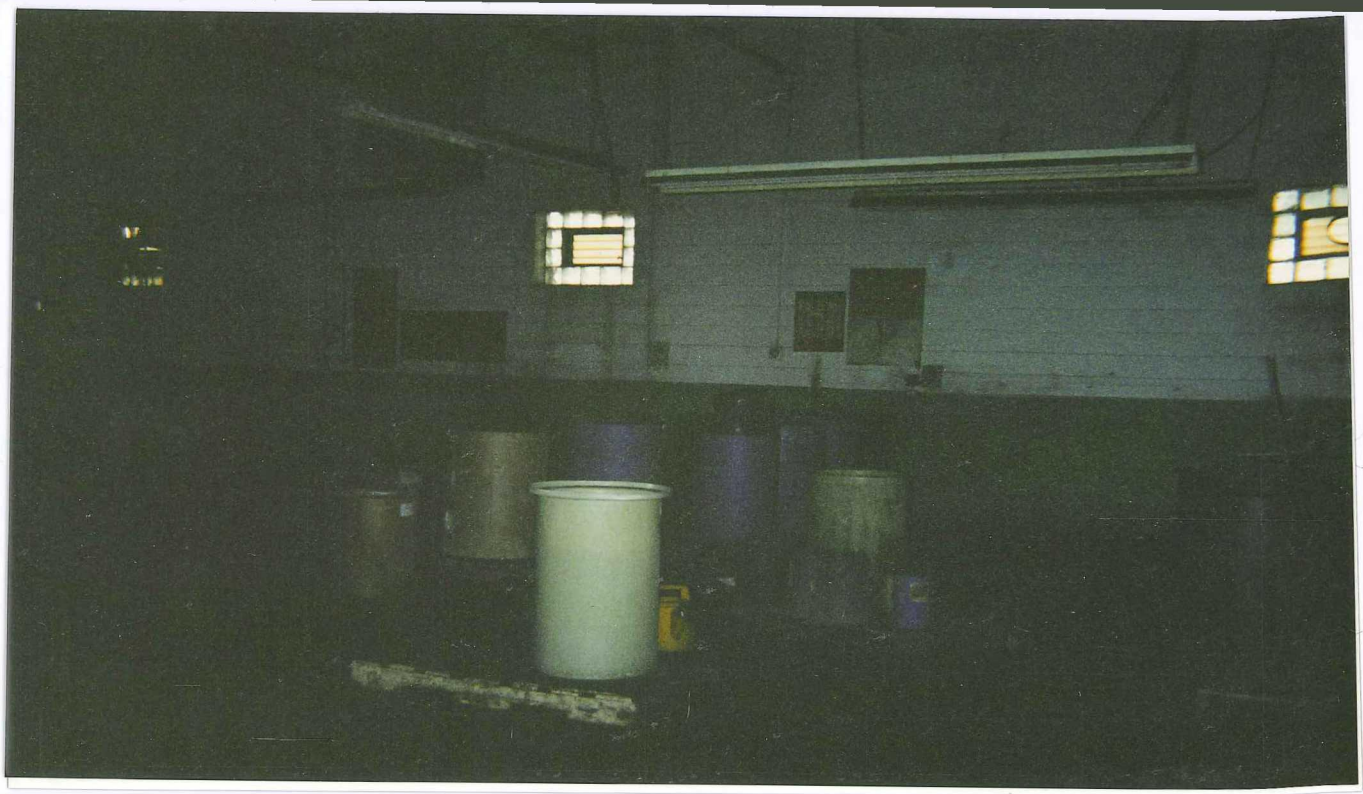


Site: R and R Sales **Date:** May 13, 1999 **Time:** 1030
Location: South Chicago Heights, IL **Direction:** Northwest **Photographer:** Lisa Graczyk
Subject: Drum labeled "Trichlorethylene".

Site: R and R Sales **Date:** May 13, 1999 **Time:** 1030
Location: South Chicago Heights, IL **Direction:** North **Photographer:** Lisa Graczyk
Subject: Group of four drums suspected to contain trichlorethylene.

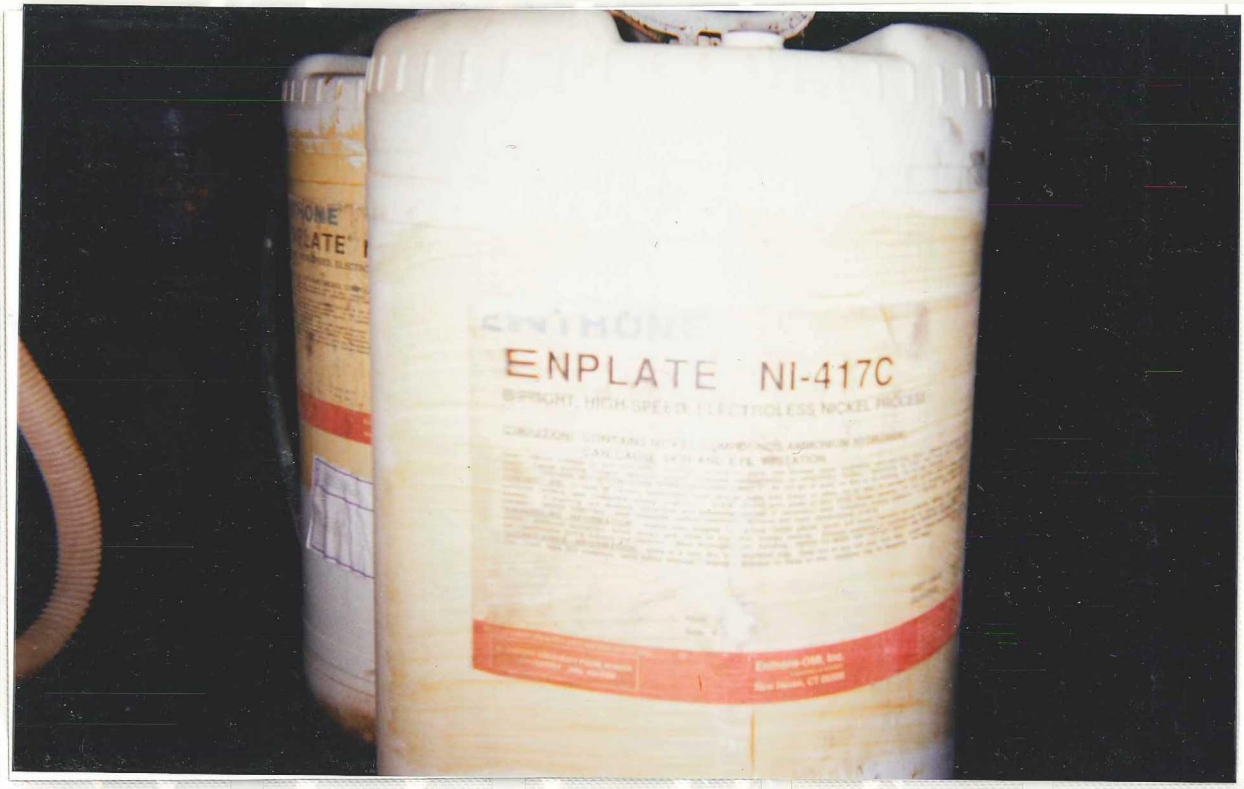
Site: R and R Sales **Date:** May 13, 1999 **Time:** 1030
Location: South Chicago Heights, IL **Direction:** North **Photographer:** Lisa Graczyk
Subject: Containers inside the building.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 1030
Location: South Chicago Heights, IL **Direction:** West **Photographer:** Lisa Graczyk
Subject: Pallet of four drums.



Site: R and R Sales **Date:** May 13, 1999 **Time:** 1030
Location: South Chicago Heights, IL **Direction:** West **Photographer:** Lisa Graczyk
Subject: Drums inside the building.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 1030
Location: South Chicago Heights, IL **Direction:** Northwest **Photographer:** Lisa Graczyk
Subject: Drums and containers inside the building.



Site: R and R Sales **Date:** May 13, 1999 **Time:** 1045
Location: South Chicago Heights, IL **Direction:** Southwest **Photographer:** Lisa Graczyk
Subject: Drum labeled "Enplate NI-417C".

Site: R and R Sales **Date:** May 13, 1999 **Time:** 1045
Location: South Chicago Heights, IL **Direction:** Northeast **Photographer:** Lisa Graczyk
Subject: Closeup of deteriorating drums in the rear yard.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 1045
Location: South Chicago Heights, IL **Direction:** North **Photographer:** Lisa Graczyk
Subject: Drum with no lid.

Site: R and R Sales **Date:** May 13, 1999 **Time:** 1045
Location: South Chicago Heights, IL **Direction:** North **Photographer:** Lisa Graczyk
Subject: Deteriorated drum. Contents are still in drum liner.

Site: R and R Sales
Location: South Chicago Heights, IL
Subject: Deteriorated drum.

Date: May 13, 1999
Direction: Down

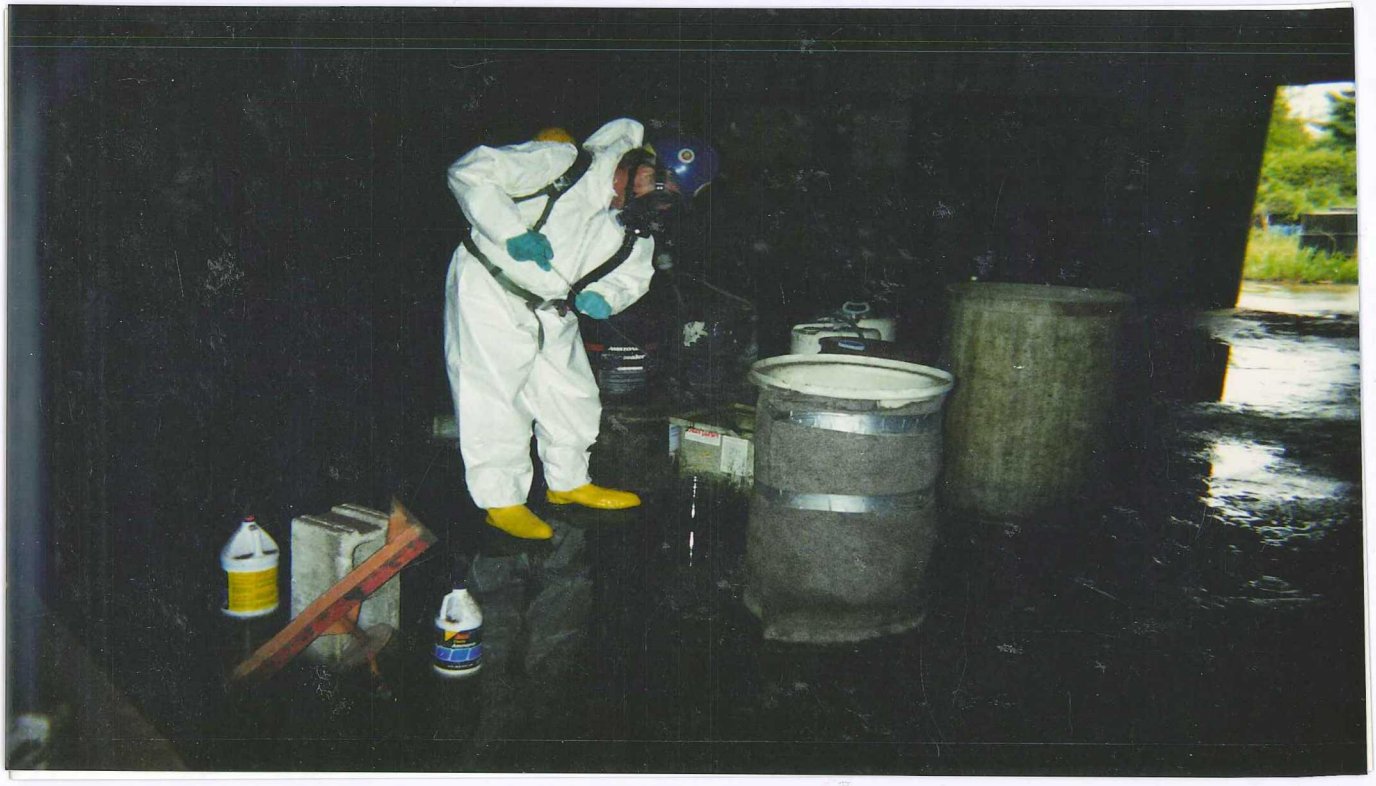
Time: 1045
Photographer: Lisa Graczyk

Site: R and R Sales
Location: South Chicago Heights, IL
Subject: Open pail outside building.

Date: May 13, 1999
Direction: Down

Time: 1045
Photographer: Lisa Graczyk

Site: R and R Sales **Date:** May 13, 1999 **Time:** 1045
Location: South Chicago Heights, IL **Direction:** North **Photographer:** Lisa Graczyk
Subject: Drum labeled "Ammonium Hydroxide".



Site: R and R Sales **Date:** May 13, 1999 **Time:** 1115
Location: South Chicago Heights, IL **Direction:** Northeast **Photographer:** Lisa Graczyk
Subject: Drums and small containers inside building. Sample SA03 is being collected.

Site: R and R Sales
Location: South Chicago Heights, IL
Subject: Office inside building.

Date: May 13, 1999
Direction: West

Time: 1115
Photographer: Lisa Graczyk

Appendix B

Drum/Container Inventory

DRUM/CONTAINER INVENTORY
R AND R SALES
SOUTH CHICAGO HEIGHTS, ILLINOIS

MAY 13, 1999

Quantity	Size	Contents
8	55-gallon	Trichloroethylene
2	55-gallon	Ammonium hydroxide
152	55-gallon	Acid solutions (nickel and chromic acid)
7	10-gallon	Chromic acid
2	55-gallon	Actane Acid Cleaner
2	20-gallon	Enthone Alumonen (flammable caustic solid)
4	10-gallon	Enthone Enstrip 103
1	40-gallon	Phosphite
16	5-gallon	Enthone Enplate
3	30-gallon	Enthone Enplate
5	1-gallon	Nickel chloride
6	5-gallon	Unknown
9	50-pound bags	Hydrated lime

Appendix C

Validated Analytical Results

ecology and environment, inc.
International Specialists in the Environment

33 North Dearborn Street
Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

MEMORANDUM

DATE: July 13, 1999

TO: File

FROM: Lisa Graczyk, START Chemist, E & E, Chicago, Illinois

THROUGH: Patrick Zwilling, Assistant START Program Manager, E & E, Chicago, Illinois

SUBJECT: Miscellaneous Data Quality Review for pH, R and R Sales, South Chicago Heights, Cook County, Illinois

REFERENCE: Project TDD S05-9905-007 Analytical TDD S05-9905-806
Project PAN 9Y0701SIXX Analytical PAN 9YAF01TAXX

The data quality assurance (QA) review of four waste samples collected from the R and R Sales site is complete. The samples were collected on May 13, 1999, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E). The samples were submitted to TriMatrix Laboratories, Inc., Grand Rapids, Michigan, for analyses. The laboratory analyses were performed according to United States Environmental Protection Agency (U.S. EPA) Method 9041A for pH.

Sample Identification

START Identification No.	Laboratory Identification No.
SA-01	222924
SA-02	222925
SA-03	222926
SA-04	222927

Data Qualifications:

I. Sample Holding Time: Acceptable

The samples were collected on May 13, 1999, and analyzed on May 26, 1999. The Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01 (April 1990) and Method 9041A do not provide holding times for pH.

II. Calibrations: Acceptable

The pH meter was checked for accuracy with a 7.00 pH standard.

III. Blanks: Not Applicable

The pH method does not require a blank to be analyzed.

IV. Assessment of Data for Use: Acceptable

The overall usefulness of the data is based on criteria for QA Level II as outlined in the OSWER Directive 9360.4-01 (April 1990) Data Validation Procedures, Section 9.0, Generic Data Validation Procedures. Based upon the information provided, the data are acceptable for use.

ecology and environment, inc.
International Specialists in the Environment

33 North Dearborn Street
Chicago, Illinois 60602
Tel. 312/578-9243, Fax: 312/578-9345

MEMORANDUM

DATE: July 13, 1999

TO: File

FROM: Lisa Graczyk, START Chemist, E & E, Chicago, Illinois

THROUGH: Patrick Zwilling, Assistant START Program Manager, E & E, Chicago, Illinois

SUBJECT: Inorganic Data Quality Review for Total Chromium and Nickel, R and R Sales, South Chicago Heights, Cook County, Illinois

REFERENCE: Project TDD S05-9905-007 Analytical TDD S05-9905-806
Project PAN 9Y0701SIXX Analytical PAN 9YAF01TAXX

The data quality assurance (QA) review of three waste samples collected from the R and R Sales site is complete. The samples were collected on May 13, 1999, by the Superfund Technical Assessment and Response Team (START) contractor, Ecology and Environment, Inc. (E & E). The samples were submitted to TriMatrix Laboratories, Inc., Grand Rapids, Michigan, for analyses. The laboratory analyses were performed according to the United States Environmental Protection Agency (U.S. EPA) Solid Waste 846 Method 6010.

Sample Identification

START Identification No.	Laboratory Identification No.
SA-02	222925
SA-03	222926
SA-04	222927

Data Qualifications:

I. Sample Holding Time: Acceptable

The samples were collected on May 13, 1999, and analyzed on May 20 and 26, 1999. This is within the six month holding time limit.

II. Calibration:

- Initial Calibration: Acceptable

  Recoveries for the initial calibration verification were within 90 to 110%, as required.

- Continuing Calibration: Acceptable

  All analytes included in the continuing calibration verification standard were within 90 to 110%, as required.

III. Blanks: Acceptable

Preparation blanks were analyzed with each analytical batch. No target analytes were detected in the blanks above the instrument detection limit except for nickel at 0.610 mg/kg. However, this result is less than 10 times the lowest sample result. Therefore no qualification is neccessary.

IV. Interference Check Samples (ICSs): Acceptable

ICSs were analyzed and recoveries were within 20% of the mean value, as required.

V. Assessment of Data for Use: Acceptable

The overall usefulness of the data is based on criteria for QA Level II as outlined in the Office of Solid Waste and Emergency Response (OSWER) Directive 9360.4-01 (April 1990) Data Validation Procedures, Section 3.0, Metallic Inorganic Parameters. Based upon the information provided, the data are acceptable for use.

TriMatrix
Laboratories, Inc.

ANALYTICAL REPORT
USEPA CLP FORM 1

Ecology and Environment
Proj: 9905-806

Subm: May 13, 1999 Samples

Submittal Number: 35045- 1
Location:
Contact: Jennifer L. Rice
Phone: (616) 975-4500

CAS No.		SA-01	Data Qualifiers C | Q | M	Units
	Lab Sample No:	222924		
E-10139	pH	<1.00	U | |	pH Units
	Sampled by:	L. Graczyk		
	Date Sampled:	05/13/99		
	Time Sampled:	11:30		
	Date Received:	05/18/99		
	Time Received:	09:52		

TriMatrix Laboratories, Inc.

ANALYTICAL REPORT
USEPA CLP FORM 1

Ecology and Environment
Proj: 9905-806

Subm: May 13, 1999 Samples

Submittal Number: 35045- 1
Location:
Contact: Jennifer L. Rice
Phone: (616) 975-4500

CAS No.		SA-02	Data Qualifiers C	Q	M	Units
	Lab Sample No:	222925				
E-10139	pH	<1.00	U			pH Units
7440-47-3	Chromium, Total	* 161000			P	mg/kg
7440-02-0	Nickel, Total	301			P	mg/kg

Sampled by: L. Graczyk
Date Sampled: 05/13/99
Time Sampled: 11:25
Date Received: 05/18/99
Time Received: 09:52

* See attached Statement of Data Qualifications.

5555 Glenwood Hills Parkway SE • PO Box 888692 • Grand Rapids, MI 49588-8692 • (616) 975-4500 • Fax (616) 942-7463

TriMatrix
Laboratories, Inc.

ANALYTICAL REPORT
USEPA CLP FORM 1

Ecology and Environment
Proj: 9905-806

Subm: May 13, 1999 Samples

Submittal Number: 35045- 1
Location:
Contact: Jennifer L. Rice
Phone: (616) 975-4500

CAS No.		SA-03	Data Qualifiers C	Q	M	Units
	Lab Sample No:	222926				
E-10139	pH	<1.00	U			pH Units
7440-47-3	Chromium, Total	65400			P	mg/kg
7440-02-0	Nickel, Total	25			P	mg/kg

Sampled by:	L. Graczyk
Date Sampled:	05/13/99
Time Sampled:	11:15
Date Received:	05/18/99
Time Received:	09:52

5555 Glenwood Hills Parkway SE • PO Box 888692 • Grand Rapids, MI 49588-8692 • (616) 975-4500 • Fax (616) 942-7463

TriMatrix Laboratories, Inc.

ANALYTICAL REPORT
USEPA CLP FORM 1

Ecology and Environment
Proj: 9905-806

Subm: May 13, 1999 Samples

Submittal Number: 35045- 1
Location:
Contact: Jennifer L. Rice
Phone: (616) 975-4500

CAS No.		SA-04	Data Qualifiers C	Q	M	Units
	Lab Sample No:	222927				
E-10139	pH	<1.00	U			pH Units
7440-47-3	Chromium, Total	68200			P	mg/kg
7440-02-0	Nickel, Total	23			P	mg/kg

Sampled by:	L. Graczyk
Date Sampled:	05/13/99
Time Sampled:	11:20
Date Received:	05/18/99
Time Received:	09:52

5555 Glenwood Hills Parkway SE • PO Box 888692 • Grand Rapids, MI 49588-8692 • (616) 975-4500 • Fax (616) 942-7463

Appendix D

MSDSs for Enthone Products

ENTHONE -- ENPLATE NI-425A - NICKEL SULFATE
MATERIAL SAFETY DATA SHEET
FSC: 6850
NIIN: 00F023576
Manufacturer's CAGE: 02258
Part No. Indicator: A
Part Number/Trade Name: ENPLATE NI-425A

General Information

Item Name: NICKEL SULFATE
Company's Name: ENTHONE INC
Company's Street: 350 PRONTAGE RD
Company's City: WEST HAVEN
Company's State: CT
Company's Country: US
Company's Zip Code: 06516-4147
Company's Emerg Ph #: 203-934-8611
Company's Info Ph #: 203-934-8611
Record No. For Safety Entry: 001
Tot Safety Entries This Stk#: 004
Status: SE
Date MSDS Prepared: 29OCT89
Safety Data Review Date: 22JUN92
Preparer's Company: ENTHONE INC
Preparer's St Or P. O. Box: 350 PRONTAGE RD
Preparer's City: WEST HAVEN
Preparer's State: CT
Preparer's Zip Code: 06516-4147
MSDS Serial Number: BNHYR

Ingredients/Identity Information

Proprietary: NO
Ingredient: WATER
Ingredient Sequence Number: 01
Percent: >75
NIOSH (RTECS) Number: ZC0110000
CAS Number: 7732-18-5

Proprietary: NO
Ingredient: NICKEL SULFATE
Ingredient Sequence Number: 02
Percent: <25%
NIOSH (RTECS) Number: QR9350000
CAS Number: 7786-81-4
OSHA PEL: 1 MG NI/M3
ACGIH TLV: 0.1 MG NI/M3; 9293

Physical/Chemical Characteristics

Appearance And Odor: GREEN LIQUID
Boiling Point: 212 F
Melting Point: 28
Specific Gravity: 1.251
Solubility In Water: COMPLETE
pH: 3.4

Fire and Explosion Hazard Data

Extinguishing Media: WATER FOG OR SPRAY, FOAM, CARGON DIOXIDE
Special Fire Fighting Proc: WEAR NIOSH APPROVED FULL PROTECTIVE CLOTHING

AND SELF CONTAINED BREATHING APPARATUS. KEEP CONTAINERS COOL TO PREVENT RUPTURE & RELEASE OF MATERIAL

Reactivity Data

Stability: YES
Hazardous Decomp Products: AT VERY HIGH TEMPERATURES (CA 1110 F) TOXIC OXIDES OF SULFUR.
Hazardous Poly Occur: NO

Health Hazard Data

Route Of Entry - Inhalation: YES
Route Of Entry - Skin: YES
Route Of Entry - Ingestion: YES
Health Haz Acute And Chronic: INHALTION: MIST OR VAPOR MAY SEVERELY IRRITATE RESPIRATORY TRACT. INGESTION: CAN CAUSE SEVERE IRRITATION TO MOUTH, THROAT, ESOPHAGUS, AND STOMACH. SKIN: SENSITIVITY TO NICKEL MAY CAUSE SKIN IRRITATION. EYES: CAN CAUSE SEVERE IRRITATION, DAMAGE TO EYES.
Carcinogenicity - NTP: NO
Carcinogenicity - IARC: NO
Carcinogenicity - OSHA: NO
Explanation Carcinogenicity: NONE
Signs/Symptoms Of Overexp: INHALATION: MIST OR VAPOR MAY SEVERELY IRRITATE RESPIRATORY TRACT. INGESTION: CAN CAUSE SEVERE IRRITATION TO MOUTH, THROAT, ESOPHAGUS, & STOMACH. SKIN: SENSITIVITY TO NICKEL MAY CAUSE SKIN IRRITATION.EYES: CAN CAUSE SEVERE IRRITATION, DAMAGE TO EYES.
Emergency/First Aid Proc: INHALATION: REMOVE PERSON FROM CONTAMINATED NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. SKIN: IMMEDIATELY WAS CONTAMINATED SKIN W/PLENTY OF WATER FOR 15 MINUTES. EYES: IMMEDIATELY FLUSH EYESW/PLENTY OF WATER FOR AT LEAST 15 MINUTES HOLDING LIDS APART TO ENSURE FLUSHING OF ENTIRE SURFACE. OBTAIN MEDICAL ATTENTION.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: CONTAIN SPILL AND SOAK UP IN SUITABLE ABSORBENT. SHOVEL UP INTO PLASTIC-LINED STEEL CONTAINERS AND COVER.
Waste Disposal Method: DISPOSE OF IN ACCORDANCE W/LOCAL, STATE, FEDERAL REGULATIONS.
Precautions-Handling/Storing: STORE IN A COOL DRY PLACE. LOOSEN COVER CAUTIOUSLY WHEN OPENING. STORE ABOVE FREEZING TEMPERATURE.
Other Precautions: AVOID CONTACT W/SKIN, EYES, AND CLOTHING.

Control Measures

Respiratory Protection: USE NIOSH APPROVED RESPIRATOR WHEN AIR CONCENTRATION IS > THAN THE TLV OR PEL.
Ventilation: LOCAL EXHAUST RECOMMENDED.
Protective Gloves: NEOPRENE/NATURAL RUBBER
Eye Protection: FACE SHIELD/CHEMICAL SAFETY GOGGLES
Other Protective Equipment: CHEMICALLY RESISTANT COVERALLS, HAT AND SHOES, BOOTS.
Work Hygienic Practices: REMOVE CONTAMINATED CLOTHING AND FOOTWEAR. WASH CLOTHING BEFORE REUSE. DISCARD FOOTWEAR IF IT CANNOT BE DECONTMINATED.

Transportation Data

Disposal Data

Label Data

Label Required: YES
Technical Review Date: 22JUN92
Label Date: 27MAY92
Label Status: F
Common Name: ENPLATE NI-425A
Chronic Hazard: YES
Signal Word: WARNING!
Acute Health Hazard-Moderate: X
Contact Hazard-Moderate: X
Fire Hazard-None: X
Reactivity Hazard-None: X
Special Hazard Precautions: INHALTION: MIST OR VAPOR MAY SEVERELY IRRITATE RESPIRATORY TRACT. INGESTION: CAN CAUSE SEVERE IRRITATIONTO MOUTH, THROAT, ESOPHAGUS, AND STOMACH. SKIN: SENSITIVITY TO NICKEL MAY CAUSE SKIN IRRITATION. EYES: CAN CAUSE SEVERE IRRITATION, DAMAGE TO EYES.
Protect Eye: Y
Protect Skin: Y
Protect Respiratory: Y
Label Name: ENTHONE INC
Label Street: 350 PRONTAGE RD
Label City: WEST HAVEN
Label State: CT
Label Zip Code: 06516-4147
Label Country: US
Label Emergency Number: 203-934-8611
Year Procured: UNK

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